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(54) **EXPLOITING A BROADCAST SYSTEM TO ENHANCE A WIRELESS GAMING EXPERIENCE
USING POSITION HOLDERS TO REPLACE DATA**

BENUTZEN EINES RUNDSENDESYSTEMS ZUR VERBESSERUNG EINER DRAHTLOSEN
SPIELERFAHRUNG DURCH VERWENDUNG VON POSITIONSHALTERN, UM DATEN ZU
ERSETZEN

EXPLOITATION D'UN SYSTEME DE RADIODIFFUSION POUR AMELIORER UNE EXPERIENCE
DE JEU SANS FIL AU MOYEN DE SUPPORTS DE POSITION POUR REMPLACER DES DONNEES

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(56) References cited:
EP-A- 0 988 878 WO-A-98/47589
US-A- 5 659 691 US-A- 5 682 404
US-A- 5 738 583 US-A- 5 899 810
US-A- 5 999 808

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates generally to a wireless digital data transfer, and more particularly to a wireless digital data transfer that exploits a broadcast system to enhance a wireless gaming experience using position holders to replace data.

2. Description of the Background Art

[0002] Wireless networks are used to transmit digital data both through wires and through radio links. Examples of a wireless network are cellular telephone networks, pager networks, etc. Such wireless networks may include land lines, radio links and satellite links, and may be used for purposes such as cellular phone systems, Internet systems, computer networks, pager systems and other satellite systems. Such wireless networks are becoming increasingly popular and of increasingly higher capacity. Much information and data is transmitted via wireless networks, and they are becoming a common part of people's business and personal lives. As people use them in greater and greater numbers, these networks have been forced to grow in both size and capacity.

[0003] One aspect of wireless digital networks that has been growing rapidly is gaming. Network gaming may consist of one or more players communicating with other players or computer systems to conduct a game. These network gaming systems may encompass simulations, gambling games, interactive games, fantasy games, role playing, combat games, adventure games, etc. The popularity is growing as computer systems and computer software for such games increases in complexity and realism. Therefore, the demand for such gaming systems has increased.

[0004] The transfer of digital data includes the transfer of text, audio, and graphical data. A user may interactively acquire the data (i.e., by sending commands or requests, such as in a game), or in a more passive manner (simply accepting and using or storing the data).

[0005] In addition to gaming, this data may have a wide variety of uses, including simulations, data sharing, skills measuring or performance testing, coordinated viewing, etc.

[0006] Wireless networks have also brought about a change in devices that communicate the data. A wide variety of handheld wireless devices have been developed along with wireless networks. Such handheld wireless devices include, for example, cellular phones, pagers, radios, personal digital assistants (PDAs), notebook or laptop computers incorporating wireless modems, mobile data terminals, application specific gaming devices, video gaming devices incorporating wireless modems, etc.

[0007] To address this increasing demand for gaming, one increasingly popular alternative has been the use of wireless networks that use radio frequency (RF) transmission. For example, using wireless devices, people can participate in a gaming experience on trains, buses, taxis, in motels, restaurants, away from home, in the backyard, on the patio, etc. Therefore, there has been increasing demand for digital network gaming that can be played using both conventional land-based links and wireless networks.

[0008] FIG. 1 shows a typical prior art cellular network 100 used for gaming. This may include a cellular network 111, a gaming server 116 connected to the cellular network 111, and one or more base stations 105 connected to the cellular network 111. The base stations 105 may communicate with a plurality of devices 101. One example of such a network used for gaming is given in U.S. Patent No. 5,738,583 to Comas et al.

[0009] A large drawback of the prior art is inadequate bandwidth. The bandwidth of a digital data link determines how much data can flow through it. The wireless network bandwidth is, of course, chosen to accommodate digitized audio signals, which do not require a large amount of bandwidth. Narrow bandwidth is a problem where graphics and video data need to be transmitted, because graphical and video data require a large amount of bandwidth (most games employ some kind of graphics and/or video). Conventional wireless networks therefore have been insufficient in performance for applications requiring transfer of large quantities of data, especially gaming data. Prior art wireless networks give a sluggish performance and unsatisfactory game play. Users want their games, or any kind of digital data download, to be as fast as they can assimilate and process the data. Users do not want to wait for data to arrive, do not want jerky images, long downloading times, and graphics that don't change as needed.

[0010] US Patent Application no. US 5,999,808 discloses a wireless gaming method for transmitting gaming messages over cellular radio system control channels for use in wireless gaming systems. The messages are then applied to communicate with, identify, monitor and locate the gaming system.

[0011] European Patent Application no. EP-A-0988878 discloses a method and system for networking several video games together to form a multi-system game for interactive play.

[0012] What is needed, therefore, is an improved digital data transfer method and apparatus for conducting a digital data transfer over a wireless network.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

FIG. 1 shows a typical prior art cellular network used for gaming;

FIG. 2 shows a wireless data system of the present

invention;

FIG. 3 shows a first digital data portion wherein data segments in the first digital data portion have been removed and replaced by position holders; and

FIG. 4 shows a flow chart of one embodiment of the method of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] The present invention has been developed to address drawbacks in the prior art due to limited bandwidth and the resulting inferiority in digital data transfer and/or inferior game play. The present invention addresses the need for larger bandwidth capability for conducting data transfer over a wireless network, and more specifically, the need for an improved gaming experience. The present invention addresses this need by supplementing the data delivery capability of a wireless network.

[0015] FIG. 2 shows a wireless data system 200 of the present invention. Included in the wireless data system 200 is a wireless network 209, a data server 212 (such as, for example, a gaming server), a plurality of base stations 206, a plurality of handheld wireless devices 202 (such as first and second wireless devices shown in Fig. 2), and a broadcast transmitter 215.

[0016] A handheld wireless device 202 may include, for example, cellular phones, pagers, radios, personal digital assistants (PDAs), notebook or laptop computers incorporating wireless modems, mobile data terminals, application specific gaming devices, video gaming devices incorporating wireless modems, etc. Preferably, with two or more wireless devices 202 in operation, the wireless devices operate in sync with each other.

[0017] The data server 212 is connected to the wireless network 209. The data server 212 may provide gaming information to the wireless network 209 (or any other type of information, but especially high-bandwidth information such as videos or graphics). The data server 212 may generate the game visuals, backgrounds, characters, audio, movements, general data, etc., to transmit to the users through the wireless network 209.

[0018] The wireless data system 200 of the present invention also includes the broadcast transmitter 215 which is connected to the data server 212. The data server 212 may therefore split up the data going to the handheld wireless devices 202 and may send only part of the information through the wireless network 209. The digital data may be divided into two or more data portions, with one or more data portions being transmitted to the plurality of handheld wireless devices 202 through the wireless network 209. The other portion or portions may be broadcast to the plurality of handheld wireless devices 202 through one or more broadcast transmitters 215.

[0019] For example, in a video game a room setting may be commonly displayed to one or more players. The room itself may not change, and only a game player's perspective within the room changes. The room data may

therefore be created as a block of data elements within the gaming data that is separately broadcast by the broadcast transmitter 215.

[0020] The data may be created in different ways. In a preferred embodiment, the data, such as a video game data, may be created as partitioned data, wherein common or repetitive data elements may be segregated, marked, or identified in some manner. Alternatively, the data may be such that it is easily recognized by the data server 212 and separately transmitted (i.e., character data may be distinguishable from scenery data, etc.).

[0021] In a further refinement of the present invention, the broadcast data may be transmitted independently of a need for the broadcast data, i.e., in a non-concurrent fashion. In this manner, common or repetitive data may be broadcast in advance. The broadcast data may therefore be stored or held in a handheld wireless device 101 and used when needed. This may include, for example, an on-line game subscription wherein at sign-up a user may receive game scenery, etc., and store it for future use. The stored data may be triggered at a later time, and may be triggered multiple times.

[0022] The data server 212 may remove at least one data segment from the digital data to form the first digital data portion (see discussion accompanying FIG. 3). Similarly, other digital data portions may be formed by removing at least one data segment from the digital data. The at least one data segment of the first digital data portion is replaced by a position holder embedded in the first digital data portion. The at least one data segment is included in another digital data portion or broadcast data portion. The removal of data segments may be based on the data type, or alternatively may be based on the desired bandwidth of the first digital data portion. Also, at least a portion of the at least one data segment of one wireless device may be different from other data segments of other wireless devices.

[0023] The broadcast of the at least one second digital data portion or broadcast data portion may be done in real time (i.e., synchronously with the first digital data portion), or may be broadcast independent of the first digital data portion. For example, common or predictable data may be communicated and stored beforehand in the data server 212, and may be broadcast to the plurality of handheld wireless devices 202 before the corresponding position holders are communicated in the first digital data portion. The removed data segments may therefore be waiting at the plurality of handheld wireless devices 202 when the corresponding position holders arrive.

[0024] As previously discussed, the wireless network 209 may be, for example, a cellular network, a pager network, or a computer network of some sort. Any one of these digital networks may include the Internet or networks such as a local area network (LAN), wide area network (WAN), virtual private network (VPN), etc.

[0025] The linkages between the wireless network 209, the data server 212, and the at least one broadcast transmitter 215 may be through a dedicated wire line,

through a phone line, through an RF link, etc.

[0026] The broadcast transmitter 215 may transmit any desired portion of a gaming data to the handheld wireless devices 202 via one or more independent link-ages, such as, for example, an independent RF trans-mission link to the handheld wireless devices 202. The broadcast transmitter 215 may be land-based or satellite-based.

[0027] The broadcast transmitter 215 may use any available broadcast format or modulation, including but not limited to amplitude modulation (AM), frequency mod-ulation (FM), phase modulation, TV broadcast format, etc. In addition, the broadcast transmitter 215 may use any available channel format or access format, such as time division multiple access (TDMA), frequency division multiple access (FDMA), code division multiple access (CDMA), Bluetooth, etc. It should be understood that the broadcast transmitter 215 may or may not conform to existing broadcast standards.

[0028] The handheld wireless devices 202 may be ca-pable of not only receiving data from the wireless network 209 or the broadcast transmitter 215, but may also be capable of sending data. In addition, a handheld wireless device 202 may be connected to the data server through a wire link 221. The wire link 221 may be used to upload data and data objects from the handheld wireless device 202 to either the data server 212 or the broadcast trans-mitter 215.

[0029] FIG. 3 shows a first digital data portion 300 wherein data segments in the first digital data portion 300 have been removed and replaced by position holders 303 and 305. The removed data segments may be gam-ing information, scenery or a visual game background, textual information, commands, audio, etc. The resulting first digital data portion 300 may require a smaller band-width for communication. The removed data segments may be put into at least one second digital data portion or broadcast digital data portion and separately commu-nicated to a handheld wireless device 202.

[0030] The position holders 303 and 305 may be used to reconstitute the digital data in the handheld wireless device 202. When both the first digital data portion and the at least one broadcast digital data portion have been received, the data segments communicated in the at least one broadcast digital data portion may be inserted back into the first digital data apportion at the appropriate locations as indicated by the position holders.

[0031] The position holders 303 and 305 may be, for example, a pointer, symbol, code, etc., that indicates where a removed data segment should be reinserted in the first digital data portion in order to reconstitute the digital data. For example, an embedded pointer type of position holder may point to a data object, where the data object is stored on the data server 212, on the broadcast transmitter 215, or on the plurality of handheld wireless devices 202.

[0032] FIG. 4 shows a flow chart 400 of one embod-iment of the method of the present invention. In step 402,

a number of data segments or data objects are removed from the digital data to be transmitted. The size and number of data segments to be removed may be deter-mined by the type of data (i.e.; a common background scenery) and the bandwidth of the wireless network. The removed data segments may be chosen in order to max-imize a data transmission efficiency.

[0033] In step 406, the removed at least one data seg-ment is replaced by at least one position holder embed-ded into the digital data , thereby forming the first digital data portion 300. It should be noted that more than one position holder may be used to replace the at least one data segment. For example, two or more symbols, codes, or pointers may be used to replace a particular data seg-ment.

[0034] In step 409, the removed at least one data seg-ment is incorporated in the at least one second digital data portion or broadcast digital data portion.

[0035] In step 413, the gaming server 116 communi-cates a first digital data portion to the wireless network 209.

[0036] As previously discussed, the first digital data portion may be any variety of information, such as infor-mation specific to a particular handheld wireless device 202, including for example gaming information, may be general information including scenery or a visual game background, textual information, commands, audio, etc. The first digital data portion may include any type or amount of data.

[0037] In step 419, the data server 212 communicates the at least one second digital data portion or broadcast digital data portion to the broadcast transmitter 215. This may or may not be done concurrently with step 413. The at least one broadcast digital data portion likewise may be any portion of the total digital data. The at least one broadcast digital data portion may be formed of at least one data segment removed from the first digital data por-tion. The at least one data segment should be chosen in order to maximize use of the broadcast transmitter band-width and minimize the impact of the wireless network bandwidth limitations on the data transfer or gaming ex-perience.

[0038] In step 422, the wireless network 209 broad-casts the first digital data portion to the plurality of hand-held wireless devices 202 through the base stations 206.

[0039] In step 425, the broadcast transmitter 215 broadcasts the at least one second digital data portion or broadcast digital data portion to the plurality of hand-held wireless devices 202.

[0040] In step 427, the first digital data portion and the at least one second digital data portion or broadcast dig-ital data portion (and any subsequent portions) are com-bined in the receiving device (i.e., a handheld wireless device 202) to reconstitute the digital data. The data seg-ments or data objects contained within the at least one broadcast digital data portion are reinserted into the first digital data portion at the appropriate position holders to form the digital data.

[0041] While the invention has been described in detail above, the invention is not intended to be limited to the specific embodiments as described. It is evident that those skilled in the art may now make numerous uses and modifications of and departures from the specific embodiments described herein without departing from the inventive concepts as recited in the accompanying claims.

Claims

1. A wireless data system (200), comprising:

a plurality of handheld wireless devices (202) for receiving digital data comprised of a first data portion and at least one second broadcast data portion;
a wireless network (209) for transmitting said first data portion to said plurality of handheld wireless devices (202), the wireless data system (200) being **characterized by**:

a data server (212) for creating said digital data, said data server (212) for communicating with said wireless network (209) and removing at least one data segment from said digital data to form said first data portion (300), replacing said at least one data segment with at least one position holder (303, 305) embedded into said first data portion, and forming said at least one second broadcast data portion including said at least one data segment; and
at least one broadcast transmitter (215) for communicating with said data server (212) and broadcasting said at least one second broadcast data portion to said plurality of handheld wireless devices (202);

wherein said plurality of handheld wireless devices (202) are adapted to receive and combine said at least one data segment of said at least one second broadcast data portion into said at least one position holder (303, 305) of said first data portion to reconstitute said digital data.

2. The wireless data system (200) of claim 1, wherein a handheld wireless device (202) of said plurality of handheld wireless devices comprises a handheld wireless gaming device.

3. The wireless data system (200) of claim 1, wherein said at least one data segment comprises data being transmitted to two or more handheld wireless devices.

4. The wireless data system (200) of claim 1, wherein

said at least one data segment comprises a graphics data.

5. The wireless data system (200) of claim 1, wherein said at least one data segment comprises a visual game background.

6. The wireless data system (200) of claim 1, wherein said broadcast transmitter (215) communicates with said data server (212) via a wire link.

7. The wireless data system (200) of claim 1, wherein said broadcast transmitter (215) communicates with said data server (212) via a RF link.

8. The wireless data system (200) of claim 1, wherein said broadcast transmitter (215) communicates with a wireless handheld device (202) via a wire link.

9. The wireless data system (200) of claim 1, wherein a wireless handheld device (202) communicates with said data server (212) via a wire link.

10. The wireless data system (200) of claim 1, wherein said broadcast transmitter (215) communicates with a wireless handheld device (202) via a RF link.

11. A method of communicating digital data to a handheld wireless device (202), **characterized by** the steps of:

removing (402) at least one data segment from said digital data to form a first data portion (300);
replacing (406) said at least one data segment with at least one position holder (303, 305) embedded into said first data portion (300);
forming (409) at least one second data portion including said at least one data segment;
communicating (413) said first data portion (300) to a wireless network (209);
communicating (419) said at least one second data portion to a broadcast transmitter (215);
broadcasting (422) said first data portion (300) from said wireless network (209);
broadcasting (425) said at least one second data portion from said broadcast transmitter (215);
and

combining (427) in said handheld wireless device (202) said at least one data segment of said at least one second data portion into said at least one position holder (303, 305) of said first data portion to reconstitute said digital data.

12. The method of claim 11, wherein said position holder (303, 305) comprises a pointer.

13. The method of claim 11, wherein said position holder (303, 305) comprises a symbol.

14. The method of claim 11, wherein said position holder (303, 305) comprises a code.
15. The method of claim 11, wherein said first data portion (300) comprises real time data.
16. The method of claim 11, wherein said at least one data segment comprises digital data being transmitted to two or more handheld wireless devices (202).
17. The method of claim 11, wherein said method further includes generating said first data portion and said at least one second data portion in a data server (212) communicating with said wireless network (209) and communicating with said broadcast transmitter (215).
18. The method of claim 11, wherein said handheld wireless device (202) comprises a handheld wireless gaming device.
19. The method of claim 11, wherein said steps of communicating said at least one second data portion and combining said at least one data segment into said at least one position holder (303, 305) are done independently of communicating said first data portion (300).
20. The method of claim 11, wherein said combining is performed in real time.
21. The wireless data system (200) of claim 1 wherein the plurality of wireless devices (202) include a first and a second wireless device, said first wireless device for receiving the first data portion and a broadcast data portion and said second wireless device for receiving a second data portion and said broadcast data portion; wherein the wireless network (209) is adapted to transmit said first data portion to said first wireless device and said second data portion to said second wireless device; said data server is adapted to create said digital data, remove a first data segment from said digital data to form said first data portion, remove a second data segment from said data to form said second data portion, and form said broadcast data portion including said first and second data segments; and said broadcast transmitter (215) for broadcasting said broadcast data portion to said plurality of wireless devices including said first wireless device and said second wireless device; wherein said first wireless device is adapted to receive and combine said first data segment of said first data portion into said broadcast data portion to reconstitute a portion of said digital data that is relevant to said first wireless device, and said second wireless device is adapted to receive and combine

said second data segment of said second data portion into said broadcast data portion to reconstitute a portion of said digital data that is relevant to said second wireless device.

22. The wireless data system (200) of claim 21 wherein said first and second wireless devices, responsive to said first and second data portions respectively, operate in sync with each other.
23. The wireless data system (200) of claim 21 wherein at least a portion of said first data segment is different from said second data segment.
24. The wireless data system (200) of claim 21, wherein said data server (212) is adapted to replace said first data segment with a first position holder, embed said first position holder into said first data portion, replace said second data segment with a second position holder, and embed said second position holder into said second data portion.

25. The wireless data system (200) of claim 24, wherein:

said first wireless device is adapted to identify the first data segment from said broadcast data portion and replace said first position holder of said first data portion with said first data segment to reconstitute said portion of said digital data that is relevant to said first wireless device; and said second wireless device is adapted to identify the second data segment from said broadcast data portion and replace said second position holder of said second data portion with said second data segment to reconstitute said portion of said digital data that is relevant to said second wireless device.

Patentansprüche

1. Drahtloses Datensystem (200), das umfasst:

eine Mehrzahl von tragbaren drahtlosen Vorrichtungen (202) zum Empfangen digitaler Daten, die einen ersten Datenteil und mindestens einen zweiten Rundfunkdatenteil umfassen; ein drahtloses Netzwerk (209) zum Übertragen des ersten Datenteils an die Mehrzahl von tragbaren drahtlosen Vorrichtungen (202), wobei das drahtlose Datensystem **gekennzeichnet ist durch:**

einen Datenserver (212) zum Erzeugen der digitalen Daten, wobei der Datenserver (212) zum Kommunizieren mit dem drahtlosen Netzwerk (209) und zum Entfernen mindestens eines Datensegmentes von

- den digitalen Daten, um den ersten Datenteil (300) zu bilden, zum Ersetzen des mindestens einen Datensegments **durch** mindestens einen in den ersten Datenteil eingebetteten Positionshalter (303, 305) und zum Bilden des mindestens einen zweiten Rundfunkdatenteils, der das mindestens eine Datensegment umfasst, vorgesehen ist; und
- mindestens einen Rundfunksender (215) zum Kommunizieren mit dem Datenserver (212) und zum Übertragen des mindestens einen zweiten Rundfunkdatenteils an die Mehrzahl von tragbaren drahtlosen Vorrichtungen (202);
- wobei die Mehrzahl von tragbaren drahtlosen Vorrichtungen (202) geeignet ist, um das mindestens eine Datensegment des mindestens einen zweiten Rundfunkdatenteils zu empfangen und mit dem mindestens einen Positionshalter (303, 305) des ersten Datenteils zu verknüpfen, um die digitalen Daten wiederherzustellen.
2. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei eine tragbare drahtlose Vorrichtung (202) von der Mehrzahl von tragbaren drahtlosen Vorrichtungen eine tragbare drahtlose Spielvorrichtung umfasst.
 3. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei das mindestens eine Datensegment Daten umfasst, die an zwei oder mehr tragbare drahtlose Vorrichtungen übertragen werden.
 4. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei das mindestens eine Datensegment Graphikdaten umfasst.
 5. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei das mindestens eine Datensegment einen visuellen Spielhintergrund umfasst.
 6. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei der Rundfunksender (215) mit dem Datenserver (212) über eine Drahtverbindung kommuniziert.
 7. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei der Rundfunksender (215) mit dem Datenserver (212) über eine RF-Verbindung kommuniziert.
 8. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei der Rundfunksender (215) mit einer drahtlosen tragbaren Vorrichtung (202) über eine Drahtverbindung kommuniziert.
 9. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei eine drahtlose tragbare Vorrichtung (202) mit dem Datenserver (212) über eine Drahtverbindung kommuniziert.
 10. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei der Rundfunksender (215) mit einer drahtlosen tragbaren Vorrichtung (202) über eine RF-Verbindung kommuniziert.
 11. Verfahren zum Kommunizieren von digitalen Daten an eine tragbare drahtlose Vorrichtung (202), durch folgende Schritte **gekennzeichnet**:
 - Entfernen (402) mindestens eines Datensegmentes von den digitalen Daten, um einen ersten Datenteil (300) zu bilden;
 - Ersetzen (406) des mindestens einen Datensegmentes durch mindestens einen Positionshalter (303, 305), der in dem ersten Datenteil (300) eingebettet ist;
 - Bilden (409) mindestens eines zweiten Datenteils, der das mindestens eine Datensegment umfasst;
 - Kommunizieren (413) des ersten Datenteils (300) an ein drahtloses Netzwerk (209);
 - Kommunizieren (419) des mindestens einen zweiten Datenteils an einen Rundfunksender (215);
 - Übertragen (422) des ersten Datenteils (300) von dem drahtlosen Netzwerk (209);
 - Übertragen (425) des mindestens einen zweiten Datenteils von dem Rundfunksender (215); und
 - Verknüpfen (427) in der tragbaren drahtlosen Vorrichtung (202) des mindestens einen Datensegmentes des mindestens einen zweiten Datenteils mit dem mindestens einen Positionshalter (303, 305) des ersten Datenteils, um die digitalen Daten wiederherzustellen.
 12. Verfahren gemäß Anspruch 11, wobei der Positionshalter (303, 305) einen Zeiger umfasst.
 13. Verfahren gemäß Anspruch 11, wobei der Positionshalter (303, 305) ein Symbol umfasst.
 14. Verfahren gemäß Anspruch 11, wobei der Positionshalter (303, 305) einen Code umfasst.
 15. Verfahren gemäß Anspruch 11, wobei der erste Datenteil (300) Echtzeitdaten umfasst.
 16. Verfahren gemäß Anspruch 11, wobei das mindestens eine Datensegment digitale Daten umfasst, die an zwei oder mehr tragbare drahtlose Vorrichtungen (202) übertragen werden.
 17. Verfahren gemäß Anspruch 11, wobei das Verfahren weiterhin ein Erzeugen des ersten Datenteils und des mindestens einen zweiten Datenteils in einem

Datenserver (212) umfasst, der mit dem drahtlosen Netzwerk (209) und mit dem Rundfunksender (215) kommuniziert.

18. Verfahren gemäß Anspruch 11, wobei die tragbare drahtlose Vorrichtung (202) eine tragbare drahtlose Spielvorrichtung umfasst.
19. Verfahren gemäß Anspruch 11, wobei die Schritte des Kommunizierens des mindestens einen zweiten Datenteils und des Verknüpfens des mindestens einen Datensegmentes mit dem mindestens einen Positionshalter (303, 305) unabhängig von einem Kommunizieren des ersten Datenteils (300) durchgeführt werden.
20. Verfahren gemäß Anspruch 11, wobei die Verknüpfung in Echtzeit durchgeführt wird.
21. Drahtloses Datensystem (200) gemäß Anspruch 1, wobei die Mehrzahl von drahtlosen Vorrichtungen (202) eine erste und eine zweite drahtlose Vorrichtung umfasst, wobei die erste drahtlose Vorrichtung zum Empfangen des ersten Datenteils und eines Rundfunkdatenteils und die zweite drahtlose Vorrichtung zum Empfangen eines zweiten Datenteils und des Rundfunkdatenteils dient; wobei das drahtlose Netzwerk (209) geeignet ist, um den ersten Datenteil an die erste drahtlose Vorrichtung und den zweiten Datenteil an die zweite drahtlose Vorrichtung zu übertragen; der Datenserver geeignet ist, um die digitalen Daten zu erzeugen, ein erstes Datensegment von den digitalen Daten zu entfernen, um den ersten Datenteil zu bilden, ein zweites Datensegment von den Daten zu entfernen, um den zweiten Datenteil zu bilden, und den Rundfunkdatenteil zu bilden, der die ersten und zweiten Datensegmente umfasst; und Rundfunksender (215) zum Übertragen des Rundfunkdatenteils an die Mehrzahl von drahtlosen Vorrichtungen, die die erste drahtlose Vorrichtung und die zweite drahtlose Vorrichtung umfassen; wobei die erste drahtlose Vorrichtung geeignet ist, um das erste Datensegment des ersten Datenteils zu empfangen und mit dem Rundfunkdatenteil zu verknüpfen, um einen Teil der digitalen Daten wiederherzustellen, der für die erste drahtlose Vorrichtung relevant ist, und die zweite drahtlose Vorrichtung geeignet ist, um das zweite Datensegment des zweiten Datenteils zu empfangen und mit dem Rundfunkdatenteil zu verknüpfen, um einen Teil der digitalen Daten wiederherzustellen, der für die zweite drahtlose Vorrichtung relevant ist.
22. Drahtloses Datensystem (200) gemäß Anspruch 21, wobei die ersten und zweiten drahtlosen Vorrichtungen, die auf die ersten beziehungsweise zweiten Datenteile ansprechen, in Sync miteinander arbeiten.

23. Drahtloses Datensystem (200) gemäß Anspruch 21, wobei mindestens ein Teil des ersten Datensegmentes von dem zweiten Datensegment verschieden ist.

24. Drahtloses Datensystem (200) gemäß Anspruch 21, wobei der Datenserver (212) geeignet ist, um das erste Datensegment durch einen ersten Positionshalter zu ersetzen, den ersten Positionshalter in den ersten Datenteil einzubetten, das zweite Datensegment durch einen zweiten Positionshalter zu ersetzen und den zweiten Positionshalter in den zweiten Datenteil einzubetten.

25. Drahtloses Datensystem (200) gemäß Anspruch 24, wobei:

die erste drahtlose Vorrichtung geeignet ist, um das erste Datensegment von dem Rundfunkdatenteil zu identifizieren und den ersten Positionshalter des ersten Datenteils durch das erste Datensegment zu ersetzen, um den Teil der digitalen Daten wiederherzustellen, der für die erste drahtlose Vorrichtung relevant ist; und die zweite drahtlose Vorrichtung geeignet ist, um das zweite Datensegment von dem Rundfunkdatenteil zu identifizieren und den zweiten Positionshalter des zweiten Datenteils durch das zweite Datensegment zu ersetzen, um den Teil der digitalen Daten wiederherzustellen, der für die zweite drahtlose Vorrichtung relevant ist.

Revendications

1. Système de données sans fil (200), comprenant :
- une pluralité de dispositifs sans fil portables (202) pour recevoir des données numériques constituées par une première partie de données et par au moins une seconde partie de données de diffusion ;
- un réseau sans fil (209) pour transmettre ladite première partie de données à ladite pluralité de dispositifs sans fil portables (202), le système de données sans fil (200) étant **caractérisé par**:

un serveur de données (212) pour créer lesdites données numériques, ledit serveur de données (212) permettant de communiquer avec ledit réseau sans fil (209) et d'enlever au moins un segment de données desdites données numériques afin de former ladite première partie de données (300), de remplacer ledit au moins un segment de données par au moins un élément de contenance de position (303, 305) qui est noyé dans ladite première partie de données et de former ladite au moins une seconde partie de

données de diffusion en incluant ledit au moins un segment de données ;

au moins un émetteur de diffusion (215) pour communiquer avec ledit serveur de données (212) et pour diffuser ladite au moins une seconde partie de données de diffusion sur ladite pluralité de dispositifs sans fil portables (202),

dans lequel les dispositifs de ladite pluralité de dispositifs sans fil portables (202) sont adaptés pour recevoir et combiner ledit au moins un segment de données de ladite au moins une seconde partie de données de diffusion selon ledit au moins un élément de contenance de position (303, 305) de ladite première partie de données pour reconstituer lesdites données numériques.

2. Système de données sans fil (200) selon la revendication 1, dans lequel un dispositif sans fil portable (202) de ladite pluralité de dispositifs sans fil portables comprend un dispositif de jeu sans fil portable.

3. Système de données sans fil (200) selon la revendication 1, dans lequel ledit au moins un segment de données comprend des données qui sont transmises sur deux dispositifs sans fil portables ou plus.

4. Système de données sans fil (200) selon la revendication 1, dans lequel ledit au moins un segment de données comprend des données graphiques.

5. Système de données sans fil (200) selon la revendication 1, dans lequel ledit au moins un segment de données comprend un arrière-plan de jeu visuel.

6. Système de données sans fil (200) selon la revendication 1, dans lequel ledit émetteur de diffusion (215) communique avec ledit serveur de données (212) via une liaison filaire.

7. Système de données sans fil (200) selon la revendication 1, dans lequel ledit émetteur de diffusion (215) communique avec ledit serveur de données (212) via une liaison RF.

8. Système de données sans fil (200) selon la revendication 1, dans lequel ledit émetteur de diffusion (215) communique avec un dispositif sans fil portable (202) via une liaison filaire.

9. Système de données sans fil (200) selon la revendication 1, dans lequel un dispositif sans fil portable (202) communique avec ledit serveur de données (212) via une liaison filaire.

10. Système de données sans fil (200) selon la revendication 1, dans lequel ledit émetteur de diffusion

(215) communique avec un dispositif sans fil portable (202) via une liaison RF.

11. Procédé de communication de données numériques sur un dispositif sans fil portable (202), **caractérisé par les étapes de :**

enlèvement (402) d'au moins un segment de données desdites données numériques afin de former une première partie de données (300) ; remplacement (406) dudit au moins un segment de données par au moins un élément de contenance de position (303, 305) qui est noyé dans ladite première partie de données (300) ; formation (409) d'au moins une seconde partie de données qui inclut ledit au moins un segment de données ; communication (413) de ladite première partie de données (300) à un réseau sans fil (209) ; communication (419) de ladite au moins une seconde partie de données à un émetteur de diffusion (215) ; diffusion (422) de ladite première partie de données (300) depuis ledit réseau sans fil (209) ; diffusion (425) de ladite au moins une seconde partie de données depuis ledit émetteur de diffusion (215) ; et combinaison (427), dans ledit dispositif sans fil portable (202), dudit au moins un segment de données de ladite au moins une seconde partie de données selon ledit au moins un élément de contenance de position (303, 305) de ladite première partie de données afin de reconstituer lesdites données numériques.

12. Procédé selon la revendication 11, dans lequel ledit élément de contenance de position (303, 305) comprend un pointeur.

13. Procédé selon la revendication 11, dans lequel ledit élément de contenance de position (303, 305) comprend un symbole.

14. Procédé selon la revendication 11, dans lequel ledit élément de contenance de position (303, 305) comprend un code.

15. Procédé selon la revendication 11, dans lequel ladite première partie de données (300) comprend des données en temps réel.

16. Procédé selon la revendication 11, dans lequel ledit au moins un segment de données comprend des données numériques qui sont transmises sur deux dispositifs sans fil portables ou plus (202).

17. Procédé selon la revendication 11, dans lequel ledit procédé inclut en outre la génération de ladite pre-

mière partie de données et de ladite au moins une seconde partie de données dans un serveur de données (212) qui communique avec ledit réseau sans fil (209) et qui communique avec ledit émetteur de diffusion (215).

- 18.** Procédé selon la revendication 11, dans lequel, ledit dispositif sans fil portable (202) comprend un dispositif de jeu sans fil portable.

- 19.** Procédé selon la revendication 11, dans lequel lesdites étapes de communication de ladite au moins une seconde partie de données et de combinaison dudit au moins un segment de données selon ledit au moins un élément de contenance de position (303, 305) sont réalisées de manière indépendante de la communication de ladite première partie de données (300).

- 20.** Procédé selon la revendication 11, dans lequel ladite combinaison est réalisée en temps réel.

- 21.** Système de données sans fil (200) selon la revendication 1, dans lequel les dispositifs de la pluralité de dispositifs sans fil (202) incluent des premier et second dispositifs sans fil, ledit premier dispositif sans fil permettant de recevoir la première partie de données et une partie de données de diffusion et ledit second dispositif sans fil permettant de recevoir une seconde partie de données et ladite partie de données de diffusion, dans lequel le réseau sans fil (209) est adapté pour transmettre ladite première partie de données audit premier dispositif sans fil et ladite seconde partie de données audit second dispositif sans fil; ledit serveur de données est adapté pour créer lesdites données numériques, pour enlever un premier segment de données desdites données numériques afin de former ladite première partie de données, pour enlever un second segment de données desdites données pour former ladite seconde partie de données et pour former ladite partie de données de diffusion en incluant lesdits premier et second segments de données ; et ledit émetteur de diffusion (215) permet de diffuser ladite partie de données de diffusion sur ladite pluralité de dispositifs sans fil incluant ledit premier dispositif sans fil et ledit second dispositif sans fil, dans lequel ledit premier dispositif sans fil est adapté pour recevoir et combiner ledit premier segment de données de ladite première partie de données selon ladite partie de données de diffusion pour reconstituer une partie desdites données numériques qui est pertinente pour ledit premier dispositif sans fil et ledit second dispositif sans fil est adapté pour recevoir et combiner ledit second segment de données de ladite seconde partie de données selon ladite partie de données de diffusion pour reconstituer une partie

desdites données numériques qui est pertinente pour ledit second dispositif sans fil.

- 22.** Système de données sans fil (200) selon la revendication 21, dans lequel lesdits premier et second dispositifs sans fil, qui sont respectivement sensibles auxdites première et seconde parties de données, fonctionnent en synchronisation l'un par rapport à l'autre.

- 23.** Système de données sans fil (200) selon la revendication 21, dans lequel au moins une partie dudit premier segment de données est différente dudit second segment de données.

- 24.** Système de données sans fil (200) selon la revendication 21, dans lequel ledit serveur de données (212) est adapté pour remplacer ledit premier segment de données par un premier élément de contenance de position, pour noyer ledit premier élément de contenance de position dans ladite première partie de données, pour remplacer ledit second segment de données par un second élément de contenance de position et pour noyer ledit second élément de contenance de position dans ladite seconde partie de données.

- 25.** Système de données sans fil (200) selon la revendication 24, dans lequel :

ledit premier dispositif sans fil est adapté pour identifier le premier segment de données à partir de ladite partie de données de diffusion et pour remplacer ledit premier élément de contenance de position de ladite première partie de données par ledit premier segment de données afin de reconstituer ladite partie desdites données numériques qui est pertinente pour ledit premier dispositif sans fil; et

ledit second dispositif sans fil est adapté pour identifier le second segment de données à partir de ladite partie de données de diffusion et pour remplacer ledit second élément de contenance de position de ladite seconde partie de données par ledit second segment de données afin de reconstituer ladite partie desdites données numériques qui est pertinente pour ledit second dispositif sans fil.

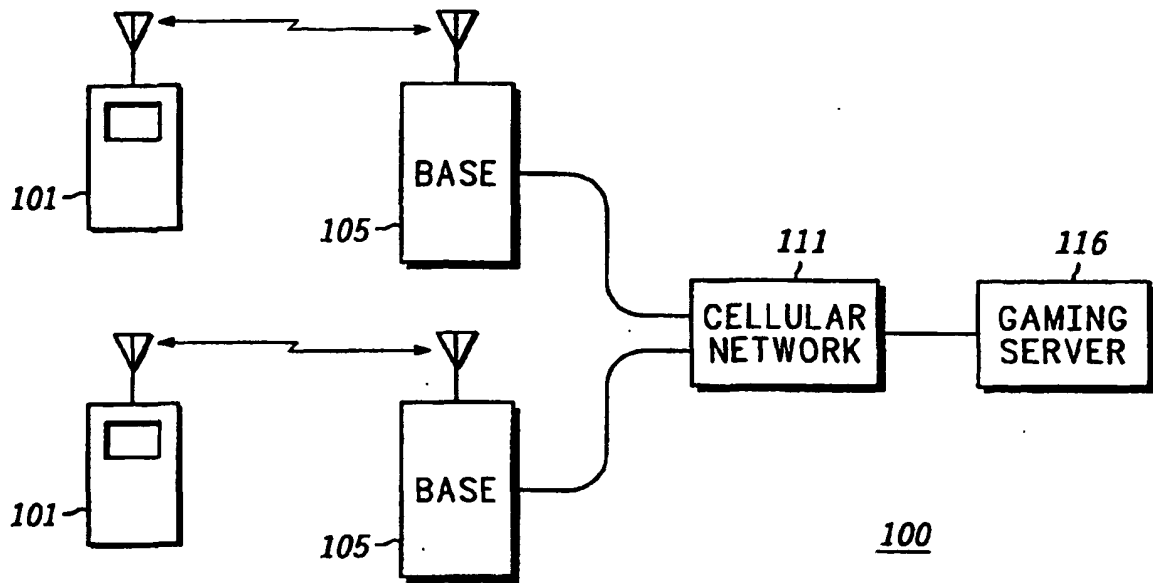


FIG. 1
-PRIOR ART-

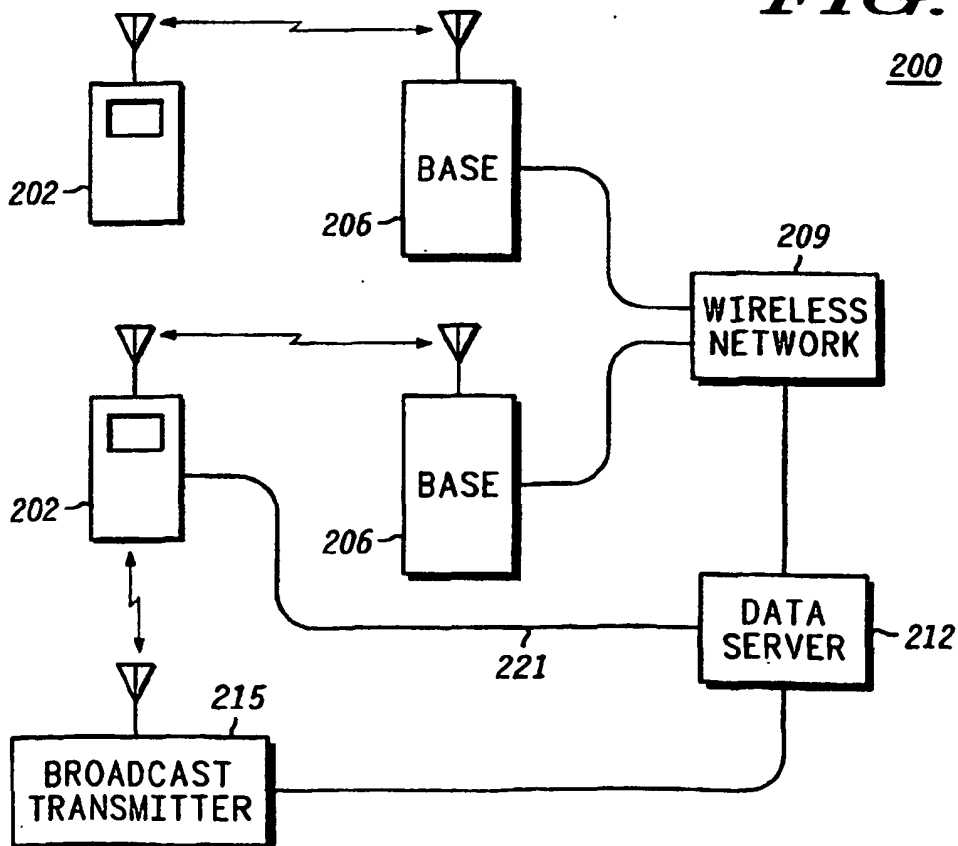


FIG. 2

FIRST DIGITAL DATA PORTION

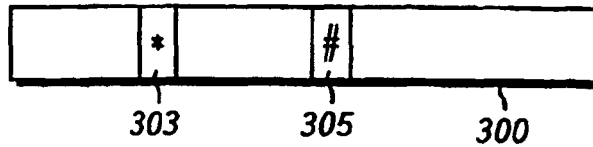


FIG. 3

FIG. 4

